

REMARKS

In view of the above amendments and substitutions, and the following discussion, Applicants respectfully request that the above-referenced Application be considered for allowance.

1. Examiner states (Office Action, paragraph 5) that, in the Abstract "Applicant is reminded of the proper language and format for an abstract of the disclosure. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.."

Applicant herein deletes the Abstract at page 10, lines 2-9 of the above-referenced Application.

Applicant herein submits for entry into the above-referenced Application, the substitute Abstract as given above: A marked-up version of the prior pending Abstract with all the changes (relative to the prior pending Abstract) indicated is included herewith.

Applicant herein affirms that the substitute Abstract as herein submitted for entry does not include new matter.

2. Examiner states (Office Action, paragraph 6) that "As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case....."

Applicant herein deletes pages 1-6 of the above-referenced. Application submits for entry into the above-referenced pending Application herein the substitute pages 1-10 wherein the Application has been corrected to the format required under 37 C.F.R. §1.77(b). A marked-up version of the prior pending Specification with all the changes (relative to the prior pending Specification) indicated is also included herewith.

Applicant herein affirms that the substitute specification as entered herein does not include new matter.

Rejections under 35 U.S.C. § 112

Claims 1-13 and 15 were rejected under 35 U.S.C. § 112, second paragraph, as indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 1-13 and 15 are herein canceled and new Claims 16-25 entered for examination. Applicants traverse the rejections and in light of the new Claims 16-25 respectfully request that the rejections under 35 U.S.C. § 112 be considered as rendered moot and be withdrawn.

1. Examiner stated (paragraph 9) “The recitation of “which contacts” in line 4 of claim 1 (line 6 overall) is vague and indefinite because it is unclear if “which” refers to the object holder or target structure. In addition, “used for cooling said object holder” in the last line of the claim is not given any patentable weight because it merely recites an intended use. Applicant should use functional language such as “wherein said thermostat cools...” Claim 1 is herein canceled. The new claims 16-25 do not include the phrase “which contacts” and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

2. Examiner stated (paragraph 10) “Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.1 The omitted structural cooperative relationships are the ways in which the various pieces of the device are connected to each other.” Claim 1 is herein canceled. The new claims 16-25 include the required language connecting the elements of the claims, and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

3. Examiner stated (paragraph 11) "Claim 2 is rejected as vague and indefinite for the recitation of "paraffin-like" because this language does not allow the metes and bounds of the claim to be adequately identified. What exactly is "paraffin-like"? Is the material paraffin?" Claim 2 is herein canceled. The new claims 16-25 do not include the term "paraffin-like", and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

4. Examiner stated (paragraph 12) "Claims 3 and 4 recite the limitation "the influence". There is insufficient antecedent basis for this limitation in the claims." Claims 3 and 4 are herein canceled. The new claims 16-25 do not include the term "the influence", and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

5. Examiner stated (paragraph 13) "Claim 5 recites the limitation "the temperature". There is insufficient antecedent basis for this limitation in the claim. In addition, the recitation of "can be" is vague and indefinite because it is unclear if the object holder is indeed cooled down or not." Claim 5 is herein canceled. The new claims 16-25 do not include the terms "the temperature" and "can be", and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

6. Examiner stated (paragraph 14) "Claim 7 recites the limitation "the discharged liquid". There is insufficient antecedent basis for this limitation in the claim." Claim 7 is herein canceled. The new claims 16-25 do not include the term "the discharged liquid" or "liquid" without antecedent basis, and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

7. Examiner stated (paragraph 15) "Claim 8 recites the limitation "the temperature". There is insufficient antecedent basis for this limitation in the claim." Claim 8 is herein canceled. The new claims 16-25 do not include the term "the temperature" without antecedent basis, and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

8. Examiner stated (paragraph 16) "Claims 10 and 11 are rejected as vague and indefinite for the recitation of a "second Peltier element" because the claims from which they depend, either directly or indirectly, do not require a first Peltier element. Applicant should consider amending the claim dependency accordingly." Claims 10 and 11 are herein canceled. The new claims 16-25 now refer to an "object holder thermostat" and a "vessel thermostat" and not to a "first Peltier element" without antecedent basis, and therefore this rejection is rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

9. Examiner stated (paragraph 17) "Claim 15 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite in that it fails to point out what is included or excluded by the claim language. This claim is an omnibus type claim." Claim 15 is herein canceled and this rejection is therefore rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

10. Examiner stated (paragraph 18) "Claim 15 provides for the use of the claimed device, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced. Claim 15 is herein canceled and this rejection is therefore rendered moot. Claim 15 is herein canceled and this rejection is therefore rendered moot. Applicants therefore respectfully request that this rejection be withdrawn.

Rejections under 35 U.S.C. § 101

Examiner stated (paragraph 19) "Claim 15 is further rejected under 35 U.S.C. § 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e. results in a claim which is not a proper process claim under 35 U.S.C. § 101." Claim 15 is herein canceled and this rejection is therefore rendered moot.

Rejections under 35 U.S.C. § 102(a)

1. Claims 1, 3-4, 12 and 15 were rejected under 35 U.S.C. §102(a) as being anticipated by *Andrevski et al.* (US Pat. 5,882,903). The Examiner stated that "The reference discloses an assay system comprising a first assembly comprising a reaction chamber and a first fluid exchange channel that provides fluid communication to and from the reaction chamber. The system also comprises a second assembly for temperature control of the reaction chamber (col. 27, lines 35-54)." j o → b

Claim 1-15 are herein canceled, and new Claims 16-25 are herein submitted for entry into the above-referenced Application for examination. Applicant respectfully traverse the rejection under 35 U.S.C. §102(a) and in light of the new claims, respectfully request that the Examiner's comments be withdrawn.

The cited reference *Andrevski et al.* discloses reaction chambers having a fluid exchange channel and an assembly for temperature control. *Andrevski et al.* at col 7, line 48 further discloses that a reaction chamber may be closed with a deformable cover. The cited reference *Andrevski et al.*, however, does not disclose an object holder capable of receiving a target structure and having a stretchable sheet disposed on the object holder, as claimed in the present application. Furthermore, the invention as claimed in the present application comprises a duct for delivering a liquid to a target structure, wherein the duct is defined by the object holder and the stretchable sheet disposed thereon. The duct as so defined, therefore, is not disclosed by the cited reference *Andrevski et al.*. *Andrevski et al.*, therefore, does not anticipate the combination of elements as claimed in the present application, and Applicant therefore respectfully requests that this rejection be withdrawn. yes

2. Claims 1-7, 12-13 and 15 were rejected under 35 U.S.C. §102(a) as being anticipated by *Freeman* (U.S. Patent No. 5,958,760). The Examiner states (Office Action, paragraph 21) that "The reference discloses a sample-processing device comprising a support cell made up of a sealed chamber provided with a fluid inlet and outlet for introduction and removal of fluids used in sample processing (col 2, lines 7-16). Typically, the support cell will be provided with a Peltier device, which may be used to heat or cool the cell to temperatures in the range of 4-100 degrees Celsius (col. 4, lines 13-22). The processing fluids are preferably held in reservoirs, each of which is attached to a pump means (col. 4, lines 39-49 and col. 5, lines 3-11). After the" §102e

processing fluids have been used, the waste is collected in a common waste duct that empties into a glass beaker (col. 10, lines 37-41). The duct of the reference is plastic, which is interpreted as "paraffin-like." Since the device of the reference is preferably used for standard staining and cytochemistry (col. 6, lines 9-21) it is inherent that the longest structure of the reference is a tissue section."

Claims 1-7, 12-13 and 15 are herein canceled and new Claims 16-25 are herein submitted for entry into the above-referenced Application for examination. In light of the new claims, Applicant traverses this rejection under 35 U.S.C. §102(a), and respectfully requests that the rejection be withdrawn.

Amended
The cited reference *Freeman* does not disclose or anticipate an object holder capable of detachably receiving a target structure and having a stretchable sheet disposed thereon, the object holder and stretchable sheet defining a duct, as claimed in the new claims of the present application. The cited reference *Freeman* does not disclose a reaction chamber, or a duct contacting the target structure therein, and which are partially defined by a stretchable membrane as is taught by the present application.

Furthermore, the duct of the reference (at cols. 10, lines 37-41) refers to a tube leading from the sealed chamber to a waste collection vessel, as shown, for example, in Fig. 4 of *Freeman*. The Examiner has equated this tube with the duct of the present application and which is defined by the object holder and the stretchable sheet thereon. The external duct of the cited reference, therefore, cannot anticipate the duct of the device of the present application and which is an integral internal element of the device and defined by the device. The duct as in accordance with the present Application, is not an external entry or exit tube. The cited reference *Freeman* discloses a plastic tube and not a duct partially defined by a stretchable membrane or sheet as in the present application. The cited reference *Freeman* does not, therefore, does not anticipate the combination of elements as claimed in the present application, and Applicant respectfully requests that this rejection be withdrawn.

Rejection under 35 U.S.C. §103.

Claims 8-11 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Freeman* in view of *Teppke et al.* (US Patent No. 5,960,640). Claims 8-11 are canceled herein and new Claims 16-25 are entered herein for examination.

Examiner states (Office Action, page 8).that "Freeman teaches a sample-processing device However, the reference does not teach the use of a vessel Peltier element."

Examiner further states (Office Action, page 8).that "*Teppke et al.* teach a cryostatic microtome comprising a coolable specimen holder and a knife holder. On way in which the specimen holder and knife holder can be cooled is through the use of Peltier elements in the specimen holder and knife holder (col 2., lines 38-45). It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention to use multiple Peltier elements as taught by *Teppke et al.* with the device of *Freeman et al.* because both references clearly teach multiple Peltier elements with use of their device that can control temperature. Although *Freeman* only teaches the use of Peltier elements with support cells, incorporating one with the discharged liquid container simply represents an optimization of assay protocol. If one wished to use the discharged liquid for another purpose or at a later time, one would have been motivated to maintain the liquid at a suitable temperature, which can be done with a cooling Peltier element. For example, *Teppke et al.* uses two Peltier elements because such an arrangement allows for independent temperature control of various components of the device." Applicant traverses this rejection and respectfully request that the rejection be withdrawn.

Teppke et al. discloses the use of a Pettier cooling unit in conjunction with a cryostatic microtome specimen holder and microtome knife holder. *Teppke et al.* does not disclose, suggest or motivate to combine a Peltier cooling unit with a device for delivering a liquid to a target structure in accordance with the claims of the present application. The present invention is not related to a microtome or components thereof such as a knife holder, and *Teppke et al.* do not suggest applying a Peltier cooling unit to other than a microtome and offers mere speculation that the reuse of a discharged liquid would motivate one to cool such a liquid with a Peltier element. Examiner, therefore, fails to state what motivation there is in the *Teppke et al.* reference that would suggest combining a Pettier cooling unit with the object holder of the present invention.

Applicants urge that Claims 8-11 are not obvious with respect to the references of record. The determination of obviousness under 35 U.S.C. § 103 is a legal conclusion based on factual evidence. *Burlington Indus., Inc. v. Quigg*, 822 F.2d 1581, 1584, 3 U.S.P.Q.2d 1436, 1439 (Fed. Cir. 1987). Initially, the PTO bears the burden of establishing the *prima facie* case of obviousness. *In re Piasecki*, 745 F.2d 1468, 1472, 223 U.S.P.Q. 785, 788 (Fed. Cir. 1984). To establish a *prima facie* case, the PTO must satisfy three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, must contain some suggestion or incentive that would have motivated the skilled artisan to modify a reference or to combine references. *In re Fine*, 837 F.2d 1071, 1074, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the time the invention was made. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200, 1209, 18 U.S.P.Q.2d 1016, 1023 (Fed. Cir. 1991). Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims. See *In re Wilson*, 424 F.2d 1382, 1385, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). To support a conclusion of obviousness, "either the references must expressly or impliedly suggest the claimed combination or the [PTO] must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references." *Ex parte Clapp*, 227 U.S.P.Q. 972, 973 (Bd. Pat. App. & Int. 1985); MPEP 2144. In evaluating obviousness, the Federal Circuit made it very clear that one must look to see if "the prior art would have suggested to one of ordinary skill in the art that this process should be carried out and would have had a reasonable likelihood of success viewed in light of the prior art." and that "*Both the suggestion and the expectation of success must be founded in the prior art, not in the applicant's disclosure.*" (emphasis added) *In re Dow Chemical Co. v. American Cyanamid Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988).

The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990) (MPEP § 2143.01). Furthermore, "the fact that the claimed invention is within the capabilities of one of ordinary skill in the art is not sufficient by itself to establish *prima facie* obviousness. A statement that modifications of the prior art to

meet the claimed invention would have been “ ‘well within the ordinary skill of the art at the time the claimed invention was made’ because the references relied upon teach that all aspects of the claimed invention were individually known in the art is not sufficient to establish a *prima facie* case of obviousness without some objective reason to combine the teachings of the references.” *A-I-Sete Corp. v. VSI Int’l. Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999) (The level of skill in the art cannot be relied upon to provide the suggestions to combine references.)

There does not appear to be any reference outside the teaching of Applicants’ written description which contains some suggestion or incentive that would have motivated one skilled in the art to modify a reference or to combine references. In an attempt to make a *prima facie* showing of obviousness, the PTO relies on *Freeman et al. in view of Teppke et al.* in stating that “It would have been *prima facie* obvious to one of ordinary skill in the art at the time of the invention to use multiple Peltier elements as taught by Teppke et al. with the device of Freeman et al. If one wished to use the discharged liquid for another purpose or at a later time, one would have been motivated to maintain the liquid at a suitable temperature, which can be done with a cooling Peltier element.”

This assertion, however, appears to be nothing more than impermissible hindsight reconstruction of applicants’ invention and is not supported by the cited art. The PTO further provides no reference that would motivate combining the cited references, thereby teaching a device for delivering a liquid to a target structure, wherein the device comprising an object holder capable of detachably receiving a target structure, said object holder operably in contact with an object holder thermostat, a stretchable sheet disposed on said object holder, and a duct, wherein said duct is defined by said object holder, and said stretchable, sheet, wherein said duct has a liquid inlet and a liquid outlet in accordance with the new claims entered herein.

As the Federal Circuit states in *In re Dembiczak*, 50 U.S.P.Q.2d 1614 (Fed. Cir. 1999), “Our analysis begins in the text of Section 103 ... with the phrase ‘at the time the invention was made.’ For it is this phrase that guards against entry into the ‘tempting but forbidden zone of hindsight,’ when analyzing the patentability of claims pursuant to that section. Additionally, both the suggestion and the explanation of success must be found in the prior art not in the applicant’s disclosure.” *In re Dow Chem. Co. v. American Cyanamid Co.*, 837 F.2d at 473, 5

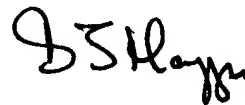
U.S.P.Q.2d at 1531. Again, one cannot base a determination of obviousness on what the skilled person might try or find obvious to try. Rather, the proper test requires determining what the prior art would have led the skilled person to do. In rejecting an obvious to experiment standard for obviousness, it has been held that permitting patentability determinations based on an "obvious to try" test "would not only be contrary to statute but result in a marked deterioration of the entire patent system as an incentive to invest in those efforts and attempts which go by the name of 'research.'" *In re Tomlinson*, 363 F.2d 928, 931, 150 U.S.P.Q. 623, 626 (C.C.P.A. 1966). The claimed invention cannot be rendered obvious simply because one or more of the cited references and the claimed invention may employ a common component.

Applicants therefore respectfully assert that the PTO has failed to establish a *prima facie* case of obviousness with respect to Claims 8-11 and in light of the new claims entered herein Applicants respectfully request that the rejection thereof under 35 U.S.C. § 103(a) be withdrawn.

Accordingly, all claims of the application are believed to be in a condition for allowance and an early notice to such effect is earnestly solicited. However, if Examiner believes that any issues remain unresolved, Applicant request that Examiner contact the undersigned.

Date: 7/22/2002

Respectfully submitted,



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PATENTS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)

SCHUBERT W.)

Art Unit: 1641

Serial No: 09/613,964)

Examiner: PADMANABHAN K.

Filed: JULY 11, 2000)

For: A DEVICE FOR BINDING)

MOLECULES, MOLECULAR GROUPS,))

MOLECULAR PARTS, AND/OR CELLS))

RECEIVED

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MARKED UP VERSION OF ABSTRACT

Abstract

The present invention relates to a device for binding molecules, molecular groups, molecular parts and/or cells contained in a liquid to target structures, [said] the device having at least one object holder with at least one target structure firmly held therein and which contacts at least one duct made of at least one material. [A] One aperture of [said] the duct is a liquid inlet aperture, and a second aperture is a liquid outlet aperture. [with] At least one object holder thermostat [which] is used for cooling the object holder.